



# Goddard Procedures and Guidelines

**DIRECTIVE NO.** GPG 8700.3  
**EFFECTIVE DATE:** \_\_\_\_\_  
**EXPIRATION DATE:** \_\_\_\_\_

**APPROVED BY Signature:** \_\_\_\_\_  
**NAME:** A. V. Diaz  
**TITLE:** Director

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**Responsible Office: 500/Applied Engineering and Technology Development**

**Title: DESIGN VALIDATION**

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## Preface

### P1. PURPOSE

This procedure establishes the process for the validation of GSFC products.

### P2. APPLICABILITY

This procedure applies to the development of all GSFC products and processes covered by the scope of the GSFC Quality Management System (see GPD 1270.3).

### P3. AUTHORITY

GPD 1270.3, GSFC Quality Management System (QMS)

### P4. REFERENCES

- a. GPG 1270.4, Quality System
- b. GPG 1310.1, Customer Agreements
- c. GPG 5330.3, Inspection and Test Status
- d. GPG 5340.2, Control of Nonconforming Product
- e. GPG 8700.2, Design Development
- f. GPG 8700.4, Technical Review Program

### P5. CANCELLATION

None

## Procedure

### 1. DEFINITIONS

- a. Validation - Confirming that the product meets design requirements. Design validation includes product inspections, functional tests, and environmental simulations.
- b. Product Design Lead (PDL) - The manager or leader with overall responsibility for managing the design activity, managing the technical and organizational interfaces identified during design planning, and where required, forming and leading the Product Design Team (PDT). The term refers to flight project managers, mission managers, instrument managers, subsystem technical managers, integrated product development team leaders, lead engineers, etc.

### 2. IMPLEMENTATION

#### 2.1 Validation Plan Review/Update

Prior to product validation, at any level of product development, the PDL shall review and update the Validation Plan (see GPG 8700.2).

Note: The contents of Validation Plans should address the following topics as applicable:

- a. Environmental tests;
- b. Functional tests;
- c. Final analysis;
- d. Reviews

#### 2.2 Product Validation

The PDL/PDT shall evaluate the performance, durability, safety, reliability and maintainability of the product under customer defined operational and storage conditions. For example, hardware may be validated by environmental test; software by Comprehensive Performance Test, and services or documentation systems by functional and operational tests.

##### 2.2.1 Intermediate Validation

The PDL/PDT shall identify and document intermediate validation(s) required on discrete portions (e.g., subassemblies, assemblies, components) of the final product.

##### 2.2.2 Final Validation

The PDL/PDT shall identify and document final validation required on the complete, integrated product.

#### 2.3 Product Release

The PDL shall document successful completion of validation and release the product for further processing in accordance with product plans (see GPG 1270.4).

## 2.4 Validation Records

Validation nonconformances shall be documented in accordance with GPG 5340.2.  
Documentation of validation actions shall be in accordance with GPG 5330.3.

## 3. RECORDS

Validation records as required by applicable Validation Plan

## Design Validation Flowchart

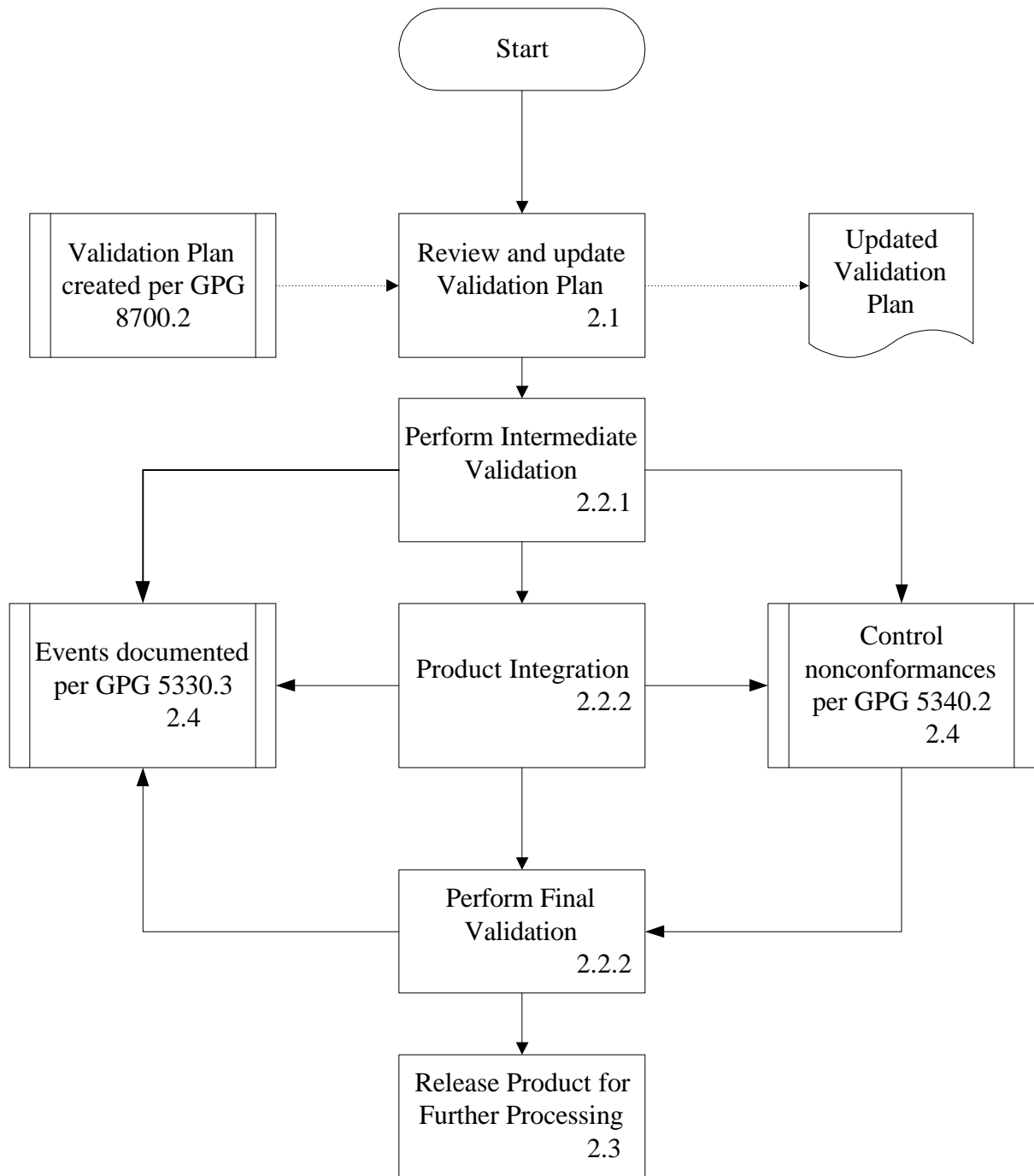


Figure 1